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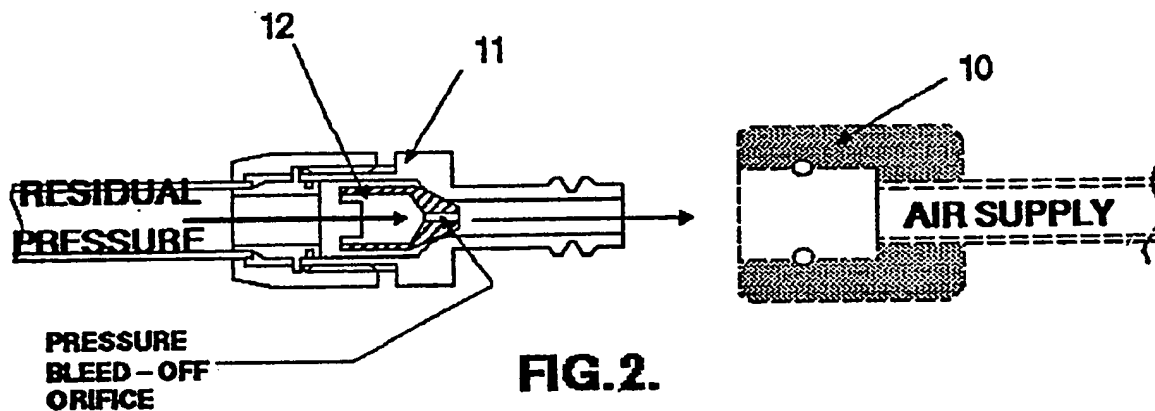
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F2V VX8
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(56) Documents cited
GB 2153050 A GB 1529614 A GB 0565291 A
US 4643222 A

(58) Field of search
UK CL (Edition K) F2V VX8
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(54) Downstream venting air line connector

(57) A pipe connector comprising a male bayonet end fitting 11 for use with a female connector 10 to provide a quick action coupling incorporates a check valve closure member 12 having a bleed orifice which, on separation of the two-part coupling, permits slow safety venting of a hose associated with the end fitting 11.



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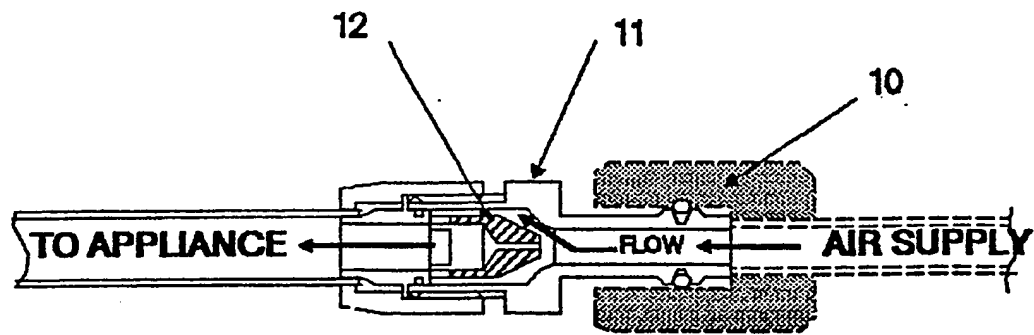


FIG. 1.

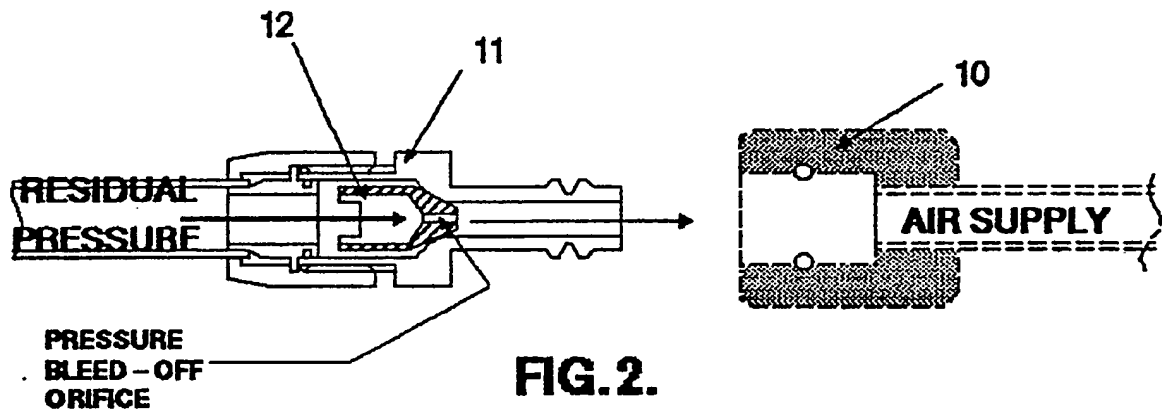
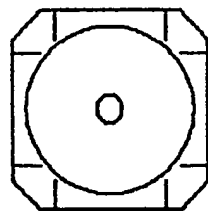


FIG. 2.



Item 12

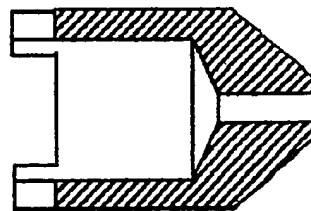


FIG. 3.

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DOWNSTREAM VENTING SAFETY AIR-LINE CONNECTOR

This invention relates to a downstream venting safety air line connector.

In current compressed air distribution systems, in workshops, educational establishments etc., individual air outlets are very often provided with snap action bayonet type connectors. By this means differing air tools can be quickly connected via a flexible hose to the main air distribution system. When such a connector has been in use and the flexible hose pressurised, if such quick action air connector is disconnected by depressing the normal lock ring etc., the air line connector bayonet will disengage very rapidly and very often flail about unless restrained by hand.

This 'flying' bayonet connector is a safety hazard as if it strikes a person on their face or especially on eyes severe damage can occur...even eye sight can be lost.

Other 'safety' connectors employ additional human actions to vent the downstream hose etc.

According to the present invention there is provided in the air line bayonet connector a one way restrictor that gives the following action automatically:

When connector is made....Compressed air flows through connector to tool

Fig 1.

without significant restriction.

On disconnect.....Piston moves to its 'sealed' position but
Fig.2 permits a controlled air leak through piston
to slowly vent compressed air in flexible
hose and air tool thus subduing violent
movement of the bayonet connector. The
venting ensures that the air tool system is
safe for subsequent personnel.

A specific embodiment of the invention will now be described by way of
example with reference to the accompanying drawing in which:

Figure 1. Illustrates the downstream venting air line
connector operation while air is flowing to
appliance. When 'connector' 11 is connected
to air supply check valve 10 the piston 12
is blown to the 'open' position as shown
thus permitting air to flow to appliance.

Figure 2. Illustrates the downstream venting air line
connector operation just after disconnection
from main air supply and while it is venting
compressed air from the flexible hose and
air tool.

The piston 12 is blown to the 'shut' position
by the residual air pressure which is slowly
vented to atmosphere through the orifice in
the nose of the piston.

Figure 3.

Illustrates by section and end views the piston configuration.

CLAIMS

1. By incorporation of a one way restrictor in a snap-action air line bayonet connector the safety hazard on disconnect is minimised i.e. movement of the bayonet is subdued.
2. Automatic venting prevents the future use of a sealed and pneumatically charged hose.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

Application number

9023359.4

Relevant Technical fields

(i) UK Cl (Edition K) F2V (VX8)

(ii) Int Cl (Edition 5) F16K, F16L

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

PAM HYETT

Date of Search

28 JANUARY 1992

Documents considered relevant following a search in respect of claims

1,2

| Category (see over) | Identity of document and relevant passages | Relevant to claim(s) |
|------------------------|--------------------------------------------|-------------------------|
| X | GB 2153050 A (ROYAL ORDNANCE) | 1,2 |
| X | GB 1529614 (CARRIER CORP) see figures 2,3 | 1,2 |
| X | GB 565291 (PARKER) | 1,2 |
| X | US 4643222 (WISER) | 1,2 |

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